

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

**MONITORING AND REPORTING PROGRAM NO. R9-2002-0104
NPDES PERMIT NO. CA0108821**

**WASTE DISCHARGE REQUIREMENTS FOR THE
RANCHO CALIFORNIA WATER DISTRICT
SANTA ROSA WATER RECLAMATION FACILITY
DISCHARGE TO THE SANTA MARGARITA RIVER
RIVERSIDE COUNTY**

A. PURPOSE

This monitoring program is intended to:

1. Document the short-term and long-term effects of the discharge to the water quality and the beneficial uses of the receiving waters.
2. Evaluate compliance with the NPDES permit terms and conditions.
3. Assess the effectiveness of industrial pretreatment and toxic control programs.

B. MONITORING PROVISIONS

1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this Order and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance.
2. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices.
3. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than 10 percent from true discharge rates throughout the range of expected discharge volumes.
4. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer.

5. The discharger shall have, and implement, an acceptable written Quality Assurance /Quality Control (QA/QC) plan for field and laboratory analyses. An annual report shall be submitted by February 1 of each year which summarizes the QA/QC activities for the previous year. Duplicate chemical analyses must be conducted on a minimum of ten percent of the samples or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by USEPA or the Regional Board, the discharger will participate in the NPDES discharge monitoring report QA/QC performance study. The discharger should have a success rate equal or greater than 80 percent.
6. All reports submitted in response to this Order shall comply with the signatory requirements of 40 CFR 122.22 (Attachment 6).
7. The discharger shall implement the above monitoring program on the first day of the month following the effective date of this Order. The Monitoring and Reporting Program of Order No. 96-54 shall remain in effect between the adoption date of this Order and the implementation of this Monitoring and Reporting Program.

C. REPORTING REQUIREMENTS

1. The discharger shall submit all information necessary to determine compliance with effluent limitations (e.g. if the permit contains a daily maximum and monthly average for a particular constituent, the discharger shall report the daily maximum and monthly average for that constituent, as defined in the reporting requirements below, and in the same units as the permit limit). For any effluent limitation, compliance shall be determined using sufficient sampling and analysis and appropriate statistical methods to evaluate multiple samples.
2. The discharger shall report with each sample result the reported Minimum Level (ML) and the laboratory's current Method Detection Limit (MDL). For each numeric effluent limitation, the discharger shall select one or more Minimum Levels (and their associated analytical methods) from Appendix 4 of the Implementation Policy. The "reported" Minimum Level is the Minimum Level (and its associated analytical method) chosen by the discharger for reporting and compliance determination from Appendix 4. The discharger must select from all Minimum Levels from Appendix 4 that are below the effluent limitation. If the effluent limitation is lower than all the Minimum Levels in Appendix 4, then the discharger must select the lowest Minimum Level.
3. Minimum Levels in Appendix 4 represent the lowest quantifiable concentration in a sample based on the proper application of method-specific analytical procedures and the absence of matrix interferences. Minimum Levels also represent the lowest standard concentration in the calibration curve for a specific analytical technique after the application of appropriate method-specific factors. Common analytical practices may require different treatment of the sample relative to the calibration standard.

Some examples of these practices are given in Section 2.4.2 of the Implementation Policy. Other factors may be applied to the Minimum Level depending on the specific sample preparation steps employed. For example, the treatment typically applied when there are matrix effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied during the computation of the reporting limit. Application of such factors will alter the reported Minimum Level.

4. The discharger shall instruct its laboratories to establish calibration standards so that the Minimum Level (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve. In accordance with the Implementation Policy, the discharger's laboratory may employ a calibration standard lower than the Minimum Level in Appendix 4.
5. In addition to paper copies, the discharger shall submit all monitoring results in an electronic (tab delimited) format with the annual report submittals.
6. A grab sample is an individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.
7. A composite sample is defined as a combination of at least 100 milliliters collected at periodic intervals during the operating hours of a facility over a 24-hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.
8. The annual average effluent limitation shall be the mean of all samples collected in one calendar year.
9. The 30-day average effluent limitation shall be the moving arithmetic mean of daily concentrations over any 30-day period.
10. The monthly average limitation shall be the mean of all samples collected in a calendar month.
11. The 7-day average shall be the moving arithmetic mean of daily concentrations over any 7-day period.
12. The weekly average shall be the mean of all samples collected in a calendar week, Sunday through Saturday.
13. The daily maximum shall be the maximum result of all samples collected in a

calendar day.

14. The instantaneous maximum, or “maximum at any time” effluent limitation shall apply each sample independently (i.e. all results shall be compared to the limit). A Maximum Contaminant Level (MCL) shall be evaluated as an instantaneous maximum.
15. If only one sample is collected during the time period associated with the effluent limitations (e.g., 30-day average or 6-month median), the single measurement shall be used to determine compliance with the effluent limitation for the entire time period.
16. When determining compliance based on a single sample, with a single effluent limitation which applies to a group of chemicals concentrations of individual members of the group may be considered to be zero if the analytical response for individual chemicals falls below the MDL for that parameter.
17. The mass emission rate (MER), in pounds per day, shall be obtained from the following calculation for any calendar day:

$$\text{mass emission rate (lb/Day)} = 8.34 \times Q \times C$$

in which Q and C are the flow rate in MGallons/Day and the constituent concentration in mg/L, respectively, and 8.34 is a conversion factor with units of [lb/MGallons/Day] / [mg/L]. If a composite sample is taken, then C is the concentration measured in the composite sample and Q is the average flow rate occurring during the period over which the samples are composited.

18. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this Order or monitoring and reporting program.
19. For all bacterial analyses, sample dilutions should be performed so the range of values extends from 2 to 16,000 MPN (most probable number). The detection methods used for each analysis shall be reported with the results of the analysis. Detection methods used for coliforms (total and fecal) shall be those presented in the most recent edition of *Standard Methods for the Examination of Water and Wastewater* or any improved method determined by the Regional Board (and approved by USEPA) to be appropriate. Detection methods used for enterococcus shall be those presented in USEPA publication USEPA 600/4-85/076, *Test Methods for Escherichia coli and Enterococci in Water By Membrane Filter Procedure* or any improved method determined by the Regional Board to be appropriate.
20. The geometric mean used for determining compliance with bacterial standards is calculated with the following equation:

$$\text{Geometric Mean} = (C_1 \times C_2 \times \dots \times C_n)^{1/n}$$

where n is the number of days samples were collected during the period and C is the concentration of bacteria (MPN/100 mL) found on each day of sampling.

21. The adjusted sodium adsorption ratio (ASAR) is calculated as follows:

$$\text{Adj. SAR} = \frac{Na}{\sqrt{(Ca_x + Mg)/2}}$$

where Na, Ca_x, and Mg are in milliequivalent per liter (meq/L) and Ca_x is a modified Ca value calculated using Table 3-2 contained in *Irrigation with Reclaimed Municipal Wastewater, A Guidance Manual*.

22. Compliance with the daily average operating filter effluent turbidity limit of 2 Nephelometric Turbidity Units (NTU) shall be determined using the levels of recorded turbidity levels at a minimum of four-hour intervals over a 24-hour period. Compliance with the turbidity standard of not exceeding 5 NTU more than 5 percent of the time over a 24-hour period shall be determined using the levels of recorded turbidity taken at intervals of no more than 1.2-hours over a 24-hour period. Should the continuous turbidity meter and/or recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted until the turbidity meter and/or recorder is fixed.
23. By February 1 of each year, the discharger shall submit an annual report to the Regional Board and USEPA Region 9 that contains tabular and graphical summaries of the monitoring data obtained during the previous year. The discharger shall discuss the compliance record and corrective actions taken or which may be needed to bring the discharge into full compliance with the requirements this Order and this monitoring and reporting program.
24. Monitoring results shall be reported at intervals and in a manner specified in Order No. R9-2002-0104 and/or this monitoring and reporting program. Monitoring reports shall be submitted to the Regional Board and to USEPA Region 9, as appropriate, according to the following schedule:

Monitoring Frequency	Reporting Period	Report Due
Continuous, Daily, Weekly, Monthly	All	First day of the second month after the month of sampling (e.g., January sampling: due March 1)
Quarterly	January – March April – June July – September October – December	May 1 August 1 November 1 February 1
Semiannually	January – June July – December	August 1 February 1
Annually*	January – December	February 1

*= in addition to applicable effluent monitoring results, the annual report shall include requirements addressed in Provisions D.9-10 (of Order No. R9-2002-0104), Monitoring Provision B.5 (of this MRP), Reporting Requirements C.3 and 21 (of this MRP), and Receiving Water Monitoring Requirement H.3 .d (of this MRP). The annual pretreatment report (E.4 of Order No. R9-2002-0104) and biosolids monitoring report (F.6 of Order No. R9-2002-0104) are due, as separate submittals, on the individual dates specified.

D. CHRONIC WHOLE EFFLUENT TOXICITY

The discharger shall conduct monthly freshwater chronic toxicity tests on 24-hour composite effluent samples. Samples shall be taken at the NPDES effluent sampling location. Whenever possible, a split of each toxicity sample collected will be used for the chemical and physical analyses required in Effluent Monitoring Section G.1, below.

1. Test Species and Methods

- a. Upon adoption of this Order, the discharger shall conduct short-term tests with the cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test), the fathead minnow, *Pimephales promelas* (larval survival and growth test), and the green alga, *Selanastrum capricornutum* (growth test) for the first three suites of tests. After this screening period, monitoring shall be conducted using the most sensitive species.
- b. Every year, the discharger shall re-screen once with the three species listed above and continue to monitor with the most sensitive species. Re-screening shall be conducted at a different time of year from the previous year's re-screening.
- c. The presence of chronic toxicity shall be estimated as specified in EPA's methods (USEPA 600/4-91-002).

2. Toxicity Limits

- a. Chronic toxicity measures a sublethal effect (e.g., reduced growth, reproduction) to experimental test organisms exposed to an effluent or ambient waters compared to that of the control organisms. Chronic toxicity limits are specified in Discharge Specification B.5 of Order No. 2002-0104.
- b. Results shall be reported in TUc, where $TUc = 100/NOEC$. The no observed effect concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a chronic test that causes no observable adverse effect on the test organisms (i.e., the highest concentration of toxicant to which the values for the observed responses are not statistically significantly different from the controls).

3. Quality Assurance

- a. A series of at least five dilutions and a control will be tested. The series shall include the following concentrations: 12.5, 25, 50, 75, and 100 percent effluent.
- b. If organisms are not cultured in-house, concurrent testing with a reference toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).
- c. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the manual, then the discharger must re-sample and re-test within 14 days or as soon as possible.
- d. The reference toxicant and effluent tests must meet the upper and lower bounds on test sensitivity as determined by calculating the percent minimum significant difference (PMSD) for each test result. The test sensitivity bound is specified for each test method (see variability document EPA/833-R-00-003, Table 3-6). There are five possible outcomes based on the PMSD result:
 1. **Unqualified Pass**—The test's PMSD is within bounds and there is no significant difference between the means for the control and the IWC treatment. The regulatory authority would conclude that there *is no toxicity at the IWC concentration*.
 2. **Unqualified Fail**—The test's PMSD is larger than the lower bound (but not greater than the upper bound) in Table 3-6 and there is a significant difference between the means for the control and the IWC treatment. The regulatory authority would conclude that there *is toxicity at the IWC concentration*.
 3. **Lacks Test Sensitivity**—The test's PMSD exceeds the upper bound in Table 3-6 and there is no significant difference between the means for the control and the IWC treatment. The test is considered invalid. An effluent sample must be collected and another toxicity test must be conducted. The discharger must re-sample and retest within fourteen (14) days or as soon as possible.
 4. **Lacks Test Sensitivity**—The test's PMSD exceeds the upper bound in Table 3-6 and there is a significant difference between the means for the control and the IWC treatment. The test is considered valid. The regulatory authority will conclude that the *is toxicity at the IWC concentration*.
 5. **Very Small but Significant Difference**—The relative difference (see Section 6.4.2, below) between the means for the control and the IWC treatment is smaller than the lower bound in Table 3-6 and this difference is statistically significant. The test is acceptable. The NOEC is determined as described in Sections 6.4.2 and 6.4.3 (below).

- e. Control and dilution water should be receiving water or laboratory water, as appropriate, as described in the manual. If the dilution water used is different from the culture water, a second control using culture water shall be used.

4. Preparing the Initial Investigation of the TRE Workplan

The discharger shall submit to the Regional Board a copy of the discharger's Toxicity Reduction Evaluation (TRE) workplan (1-2 pages) within 90 days of the effective date of this permit. This plan shall describe the steps the discharger intends to follow if toxicity is detected, and should include, at least the following items:

- a. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.
- b. A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices.
- c. If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

5. Accelerated Testing

- a. If the initial investigation indicates the source of toxicity (for instance, a temporary plant upset), then only one additional test is necessary. If toxicity is identified in this test, then Section 6 shall apply.
- b. If chronic toxicity is identified, then the discharger shall conduct six more tests, approximately every two weeks, over a twelve-week period. Testing shall commence within two weeks of receipt of the sample results of the exceedance of the WET monitoring trigger.
- c. If none of the six tests indicate toxicity, then the discharger may return to the normal testing frequency.

6. Toxicity Reduction Evaluation (TRE) and Toxicity Identification Evaluation (TIE)

- a. If chronic toxicity is detected in any of the six additional tests, then, in accordance with the facility's initial investigation according to the TRE workplan, the discharger shall initiate a TRE within fifteen (15) days of the exceedance to reduce the cause(s) of toxicity. At a minimum, the discharger shall use EPA manual EPA/833B-99/002 as guidance. The discharger will expeditiously develop a more detailed TRE workplan, which includes:

- (1) Further actions to investigate and identify the cause of toxicity

- (2) Actions the discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity
 - (3) A schedule for these actions
 - b. The discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The discharger shall use the EPA acute and chronic manuals, EPA/600/6-91/005F (Phase I)/EPA/600/R-96-054 (Phase II), and EPA-600/R-92/081 (Phase III) as guidance.
7. Reporting
- a. The discharger shall submit the results of the toxicity tests, including any accelerated testing conducted during the month, in TUs with the discharge monitoring reports (DMR) for the month in which the test is conducted. If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, pursuant to Section 5, then those results also shall be submitted with the DMR for the quarter in which the investigation occurred.
 - b. The full report shall be submitted by the end of the month in which the DMR is submitted.
 - c. The full report shall consist of (1) the results; (2) the dates of sample collection and initiation of each toxicity test; (3) the applicable limit(s).
 - d. Test results for chronic tests also shall be reported according to the chronic manual chapter on Report Preparation and shall be attached to the DMR.
 - e. The discharger shall notify the Regional Board in writing 15 days after the receipt of the results of a monitoring limit exceedance. The notification will describe actions the discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by the permit, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.
8. This permit may be modified in accordance with the requirements set forth at 40 CFR Parts 122 and 124 to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information.

E. ACUTE WHOLE EFFLUENT TOXICITY

- 1. The Acute Toxicity test will be used to determine the presence of acute toxicity, as specified in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA 600/4-90/027F, September 1991 or subsequent editions). The test results shall be reported as percent survival of the test organism or 96-hour LC-50 (see below). If acceptable test results are not achieved, the discharger must resample and retest within 14 days.

2. The discharger shall conduct monthly freshwater acute toxicity tests on 24-hour composite effluent samples run at five concentrations (12.5, 25, 50, 75, and 100% effluent) and a control, with a 96-hour static-renewal test, using the most sensitive species, as determined by the screening criteria for chronic toxicity. If the most sensitive test organism determined by the screening above is *Selenastrum*, then the chronic toxicity testing shall also include the second most sensitive test organism, since the chronic toxicity test using *Selenastrum* does not provide a mortality endpoint to determine acute toxicity. Samples shall be taken at the NPDES effluent sampling location.
3. The Acute Toxicity test shall be conducted using an established protocol, e.g., American Society for Testing Materials (ASTM), USEPA, American Public Health Association, or State Board. Acute Toxicity shall be expressed in Toxic Units Acute (TUa), where:

$$\text{TUa} = \frac{100}{96\text{-hour LC}_{50}}$$

Where LC_{50} (Lethal Concentration 50%) is the percent waste giving 50% survival of test organisms. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the environment, but not as a result of dilution, the LC_{50} may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC_{50} due to greater than 50% survival of the test species in 100% waste, the toxicity concentration shall be calculated by the following:

$$\text{TUa} = \frac{\log(100 - S)}{1.7}$$

where S is the percentage survival in 100% waste. If $S > 99$, TUa shall be reported as zero.

F. INFLUENT MONITORING

A Sampling station location shall be established for the point of inflow to the treatment plant and shall be located upstream of any in-plant return flows, and where representative samples of the influent can be obtained. The date and time of sampling (as appropriate) shall be reported with the analytical values determined. Influent samples shall be collected on the same day as the effluent samples for that constituent.

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The following shall constitute the influent monitoring program:

INFLUENT MONITORING PROGRAM

CONSTITUENT	UNIT	TYPE OF SAMPLE	MONITORING FREQUENCY	REPORTING FREQUENCY
Flowrate*	MGallons /Day	recorder/totalizer	Continuous	Monthly
BOD**	mg/L	24-hr composite	3 x per calendar week	Monthly
Total Suspended Solids (TSS)	mg/L	24-hr composite	3 x per calendar week	Monthly

* = Both the daily average and daily maximum shall be reported for influent flowrate.

** = Biochemical Oxygen Demand, performed at 20° C for 5 days

Units

MGallons/Day = Million Gallons per Day

mg/L = milligrams per Liter

G. EFFLUENT MONITORING

1. A sampling station shall be established at the facility's discharge point where representative samples of the discharge to Murrieta Creek can be obtained. The date and time of sampling (as appropriate) shall be reported with the analytical values determined.

The following shall constitute the effluent monitoring program:

EFFLUENT MONITORING PROGRAM

CONSTITUENT	UNITS	TYPE OF SAMPLE	MONITORING FREQUENCY	REPORTING FREQUENCY
Flowrate ¹	MGallon s/Day	Recorder/ totalizer	Continuous	Monthly
Specific conductance ¹	µmhos/ cm	Recorder	Continuous	Monthly
Turbidity ²	NTU	Recorder	Continuous	Monthly
Total Residual Chlorine ³	mg/L lb/day	Recorder/ totalizer	Continuous	Monthly
pH ¹	Units	Grab or Continuous	Daily	Monthly
Total Coliform ⁴	MPN/ 100 mL	Grab	Daily	Monthly
BOD	mg/L lb/day	24-hr composite	3 x per calendar week	Monthly
TSS	mg/L lb/day	24-hr composite	3 x per calendar week	Monthly
Fecal Coliform	MPN/ 100 mL	Grab	Weekly	Monthly
Entertococcus	CFU/ 100 mL	Grab	Weekly	Monthly
<i>E. coli</i>	CFU/ 100 mL	Grab	Weekly	Monthly
Total Organic Carbon (TOC)	mg/L lb/day	Grab	Weekly	Monthly
Total Dissolved Solids (TDS)	mg/L lb/day	24-hr composite	Monthly	Monthly
Chloride	mg/L lb/day	24-hr composite	Monthly	Monthly
ASAR	--	24-hr composite	Monthly	Monthly
Sulfate	mg/L lb/day	24-hr composite	Monthly	Monthly
Nitrogen (series) ⁵	mg/L lb/day	24-hr composite	Monthly	Monthly
Nitrate	mg/L lb/day	24-hr composite	Monthly	Monthly
Ammonia (un-ionized)	mg/L lb/day	24-hr composite	Monthly	Monthly
Phosphorus (series) ⁶	mg/L lb/day	24-hr composite	Monthly	Monthly
Iron	mg/L lb/day	24-hr composite	Monthly	Monthly
Manganse	mg/L lb/day	24-hr composite	Monthly	Monthly
MBAS	mg/L lb/day	24-hr composite	Monthly	Monthly

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CONSTITUENT	UNITS	TYPE OF SAMPLE	MONITORING FREQUENCY	REPORTING FREQUENCY
Boron	mg/L lb/day	24-hr composite	Monthly	Monthly
Fluoride	mg/L lb/day	24-hr composite	Monthly	Monthly
Color	Units	24-hr composite	Monthly	Monthly
Acute Toxicity	TUa	24-hr composite	Monthly	Monthly
Chronic Toxicity	TUc	24-hr composite	Monthly	Monthly
Bis (2-Ethylhexyl) Pthalate	µg/L lb/day	24-hr composite	Semiannually	Semiannually
Chlorodibromomethane	µg/L lb/day	24-hr composite	Semiannually	Semiannually
Copper	µg/L lb/day	24-hr composite	Semiannually	Semiannually
Cyanide	µg/L lb/day	24-hr composite	Semiannually	Semiannually
Dichlorobromomethane	µg/L lb/day	24-hr composite	Semiannually	Semiannually
Methylene Chloride	µg/L lb/day	24-hr composite	Semiannually	Semiannually
Selenium	µg/L lb/day	24-hr composite	Semiannually	Semiannually
(Total) Trihalomethanes	mg/L	24-hr composite	Semiannually	Semiannually
Phenolic compounds	mg/L	24-hr composite	Annually	Annually
Inorganic chemicals ⁷ not already referenced (Attachment 2)	mg/L	24-hr composite	Annually	Annually
Organic chemicals ⁷ not already referenced (Attachment 3)	mg/L	24-hr composite	Annually	Annually
Radionuclides ⁷ (Attachment 4)	PCi/L	24-hr composite	Annually	Annually
Secondary Drinking Water standards ⁷ not already referenced (Attachment 5)	--	24-hr composite	Annually	Annually
EPA Priority Pollutants not already referenced	µg/L	24-hr composite	Annually	Annually

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- 1 = Both the daily average and daily maximum shall be reported for the flowrate to Murrieta Creek. Specific conductance and pH shall only be reported as the daily averages, from midnight to midnight.
- 2 = Effluent turbidity analyses should be conducted using a continuous monitoring and recording turbidimeter. The discharger shall report monthly results of four-hour turbidity readings, average effluent turbidity (24-hours), 95 percentile effluent turbidity (24-hours), and the daily maximum turbidity (daily being defined as the 24-hour period from 12 am to 12 am). Continuous turbidity monitoring must also be provided prior to filtration to ensure adequate process control, and automatic actuate coagulant feed when the turbidity of the secondary treated effluent is greater than 10 NTU.
- 3 = Chlorine concentrations shall be recorded by a continuous recording meter. The discharger shall report the daily average, maximum, and minimum values. Compliance with CT (chlorine concentration times modal contact time) values shall be determined at least daily.
- 4 = Results of daily total coliform monitoring shall be reported, along with the running 7-day median calculation, and the maximum daily coliform reading from the previous month.
- 5 = Nitrogen (series) = total nitrogen, organic nitrogen, nitrate, nitrite, ammonia
- 6 = Phosphorous (series) = total phosphorous and orthophosphate phosphorous
- 7 = The minimum frequency of monitoring for these constituents is automatically increased to semiannually if any analysis for this constituent yields a result higher than any effluent limit specified or referenced in this Order for this constituent. The increased minimum frequency of monitoring shall remain in effect until the results of two consecutive analyses for this constituent are below all effluent limits specified.

Units

MGallons/Day = Million Gallons per Day
µmhos/ cm =micromhos per centimeter
NTU = Nephelometric Turbidity Units
mg/L = milligrams per Liter
µg/L = micrograms per Liter
MPN/100 mL = most probable number in 100 mL (sample volume)
lb./day = pounds per day
TUa = toxic units, acute
TUc = toxic units, chronic
CFS = Cubic Feet per Second
CFU = Colony Forming Units per 100 mL

2. The SWRCB Implementation Policy requires that each major POTW monitor its effluent for the presence of the 17 congeners of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) for which USEPA has published toxic equivalency factors (TEFs) once during dry weather and once during wet weather for each of the three years following adoption of the Policy. Due to the delay in implementing this requirement, in lieu of the above monitoring schedule, the discharger shall conduct this monitoring twice during dry weather and twice during

wet weather, for one year. For each of the 17 congeners, the discharger shall provide the analytical results of the effluent monitoring, including the quantifiable limit and MDL, and the measured or estimated concentration. In addition, the discharger shall provide a multiplication of the measured or estimated congener concentration by its respective toxic equivalency factor (TEF) and the sum of these values. Refer to Section 2.3 of the Implementation Policy for SWRCB-approved laboratory methods, reporting requirements, and a list of the 17 congeners. This information shall be submitted to the RWQCB as part of the discharger's self-monitoring reports, under penalty of perjury, as it becomes available, and no later than April 28, 2003 (for the final submittal).

H. RECEIVING WATER MONITORING

1. To determine compliance with water quality standards, the receiving water quality monitoring program must document conditions in the vicinity of the receiving water discharge points, at reference stations, and at areas beyond the immediate vicinity of the discharge points where discharge impacts might reasonably be expected. Monitoring must reflect conditions during all critical environmental periods.
2. The following shall constitute the receiving water monitoring stations:

Station Number	Location
1	Murrieta Creek channel, upstream from the SRWRF discharge. (Station #1 in Order No. 96-54)
2	Murrieta Creek channel, 250 feet downstream of the SRWRF discharge, prior to any confluence with Murrieta Creek.
3	Murrieta Creek at Temecula , USGS Gauging Station, located immediately upstream of where Murrieta Creek and Temecula Creek combine to form the Santa Margarita River.
4	Reference Station- Temecula Creek at I-15, upstream of where Murrieta Creek and Temecula Creek combine to form the Santa Margarita River.
5	Santa Margarita River at Willow Glenn , (previously Station #2) located approximately 11 miles downstream of the SRWRF discharge, immediately above the confluence of the Santa Margarita River and Rainbow Creek.
6	Santa Margarita River at DeLuz crossing, (previously Station #3) located approximately 13 miles downstream of the SRWRF discharge, immediately downstream from the confluence of the Santa Margarita River and DeLuz Creek.

3. Monitoring surveys conducted to meet receiving water monitoring requirements of the "Monitoring and Reporting Program" shall include, as a minimum, the following information:

Monitoring and Reporting Program

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- a. A description of climatic and receiving water characteristics at the time of sampling [e.g., observations of wind (direction and speed); weather (cloudy, sunny, or rainy, etc.); observations of water color or discoloration (percent algal cover at surface and bottom); oil and grease; turbidity; odor, and materials of sewage origin in the water or on the riverbank(s); time of sampling; air temperature ($^{\circ}\text{C}$); water temperature ($^{\circ}\text{C}$), etc.].
 - b. A description of sampling stations, including characteristics unique to each station [e.g., GPS coordinates for station location, photodocumentation, sediment characteristics, rocks, river flow (contiguous or terminated), and estuary mouth conditions (i.e. open or closed due to sand deposition) etc.].
 - c. A description of the sample collection and preservation procedures used in the survey and a description of the specific method used for laboratory analysis.
 - d. An annual in-depth discussion of the survey results. The discussion shall compare data from the reference station(s) with data from the stations located in the area of the discharge. All tabulations and computations shall be explained.
4. Receiving water monitoring shall be conducted (at stations where there is flowing water) during periods of discharge from the SRWRF. Whenever possible, samples shall be collected on the same day that these constituents are collected at the effluent point. Sample methods, preservation, and analyses, when not specified, shall be approved by the Executive Officer. The following shall constitute the receiving water monitoring program:

RECEIVING WATER MONITORING PROGRAM

CONSTITUENT	UNITS	SAMPLE TYPE	STATION #	MINIMUM FREQUENCY OF ANALYSES
Flowrate	CFS	Cross-sect. velocity/area	1-6	Weekly
Dissolved Oxygen*	mg/L	Grab	1-6	Weekly
Temperature	° C	Grab	1-6	Weekly
Specific conductance	µmhos/ cm	Grab	1-6	Weekly
pH	units	Grab	1-6	Weekly
Total Residual Chlorine	mg/L	Grab	1-3	Weekly
Fecal Coliform	MPN/100 mL	Grab	1-6	Weekly
Entertococcus	CFU/100 mL	Grab	1-6	Weekly
<i>E. coli</i>	CFU/ 100 mL	Grab	1-6	Weekly
Turbidity	NTU	Grab	1-6	Weekly
Chlorophyll-a	mg/m ³	Grab	1-6	2 times/month
Phosphorous (series)	mg/L	Grab	1-6	2 times/month
Nitrogen (series)	mg/L	Grab	1-6	2 times/month
TDS	mg/L	Grab	1-6	Monthly
TOC	mg/L	Grab	1-6	Monthly
Benthic invertebrates**	IBI**	**	1-6**	**

* If only one measurement is collected for dissolved oxygen, it shall be determined no later than 8:00 A.M. For each measurement reported, the discharger shall also report the percent saturation (calculated based on temperature).

** Benthic invertebrate analysis shall be conducted in May, August, October, and December of each year, using the California Stream Biassessment Procedure (CSBP), professional level point source protocol, and reported using the Index of Biotic Integrity (IBI), as well as each of the individual endpoints. The sampling locations shall be within ½ mile upstream or downstream of the chemical sampling location, at a reach with five riffles or runs. If necessary, reaches with 3-4 riffles will be acceptable. The site shall be selected at the time of sampling, using the sampler's discretion. If a location is dry at the time of sampling the sampler shall attempt to conduct sampling whenever possible for that month.

5. The discharger shall notify the Regional Board within 24 hours if any one of the following conditions is noted:
 - a. The minimum dissolved oxygen level is below 4 mg/L
 - b. The percent coverage by algal mats exceeds 50%, and the stream velocity is less than 1 CFS.
 - c. The percent coverage by algal mats exceeds 75%

I. GROUNDWATER MONITORING

1. Within 90 days from the adoption of this order, the discharger shall propose, in writing to the Executive Officer, two (new or existing) groundwater monitoring well sites that are distanced, but indicative of groundwater flow from the SRWRF

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discharge. The well sites shall be located between the discharge location and the nearest downgradient domestic water supply well.

2. After suitable well monitoring locations have been selected, the discharger shall sample the designated well sites for the following constituents, in compliance with the frequencies specified below. Samples shall be collected on the same day that these constituents are collected at the effluent point. Results shall be submitted with the discharge monitoring reports, as well as entered into the USEPA STORET database.

CONSTITUENT	UNITS	TYPE OF SAMPLE	MONITORING FREQUENCY	REPORTING FREQUENCY
TOC	mg/L	Grab	Quarterly	Semi-annually
Total Nitrogen	mg/L	Grab	Quarterly	Semi-annually
Total Coliform	MPN/ 100 mL	Grab	Quarterly	Semi-annually
(Total) Trihalomethanes	mg/L	Grab	Quarterly	Semi-annually
Phenolic compounds	mg/L	Grab	Quarterly	Semi-annually
Inorganic chemicals (Attachment 2)	mg/L	Grab	Quarterly	Semi-annually
Organic chemicals (Attachment 3)	mg/L	Grab	Quarterly	Semi-annually
Radionuclides (Attachment 4)	--	Grab	Once every 5 years	Once every 5 years
Secondary Drinking Water standards (Attachment 5)	mg/L	Grab	Annually	Annually

3. Within 1 year from the adoption of this Order, the discharger shall submit the results of a study using pharmaceutical compounds to identify and quantify effluent contributions at the selected well site from the SRWRF discharge.


J. SOLIDS MONITORING

1. A log of the type, quantity, and manner of disposal of solids removed in the course of sewage treatment shall be maintained and submitted quarterly to the RWQCB.
2. A report identifying the volume of screenings, sludges, grit, and other solids removed from the wastewater and the point(s) at which these wastes were disposed of shall be submitted annually. A copy of all annual reports required by 40 CFR Part 503 shall be submitted to the Regional Board at the same time those reports are submitted to USEPA. In addition, an annual report shall be submitted to the USEPA and this RWQCB

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In addition, an annual report shall be submitted to the USEPA and this RWQCB containing monitoring results and vector attraction reduction requirements in accordance with 40 CFR 503.

I, John H. Robertus, Executive Officer of the San Diego Regional Water Quality Control Board, do hereby certify the foregoing is a full, true, and correct copy of a Monitoring and Reporting Program adopted by the California Regional Water Quality Control Board, San Diego Region, on October 9, 2002.



JOHN H. ROBERTUS
Executive Officer